MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2018/2019

BJA1034 – Java Programming Fundamentals

(All sections / Groups)

31 MAY 2019
9.00 a.m – 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 3 pages (including cover page) with 4 questions only.
2. Attempt ALL FOUR questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answer in the Answer Booklet provided.

Question 1 (25 Marks)

To encourage good grades, Multimedia University has decided to award each student a book store credit that is 10 times the student's grade point average. In other words, a student with a 3.2 grade point average receives a RM 32 credit.

Create a class that prompts a student for a name and grade point average, and then passes the values to a method that displays a descriptive message. The message uses the student's name, echoes the grade point average, and computes and displays the credit.

i. Draw the flowchart of the program. (9 Marks)
ii. Write the Java program. (16 Marks)

Question 2 (25 Marks)

Create an Automobile class for a dealership. Include fields for an ID number, make, model, color, year, and miles per gallon. Include get and set methods for each field.

1. Do not allow the ID to be negative or more than 9999; if it is, set the ID to 0.
2. Do not allow the year to be earlier than 2000 or later than 2017; if it is, set the year to 0.
3. Do not allow the miles per gallon to be less than 10 or more than 60; if it is, set the miles per gallon to 0.

Include a constructor that accepts arguments for each field value and uses the set methods to assign the values. Write an application that declares 3 Automobile objects and demonstrates that all the methods work correctly. (25 Marks)

Question 3 (25 Marks)

Write an application that computes a business's potential profits each year for 20 years using the following assumptions:

1. Gross profit in the first year is projected to be RM 20,000.
2. Expenses in the first year are expected to be RM 35,000.
3. Net profit or loss is gross profit minus expenses.
4. Gross profits are expected to increase 10 percent each year.
5. Expenses are expected to increase 4 percent each year.

Continued...

Display the year, the gross profit, the expenses, and the net profit for each year. Also display the year in which a net profit is first reported. (25 Marks)

Question 4 (25 Marks)

A personal phone directory contains room for first names and phone numbers for 30 people. Assign names and phone numbers for the first 10 people. Prompt the user for a name, and if the name is found in the list, display the corresponding phone number. If the name is not found in the list, prompt the user for a phone number, and add the new name and phone number to the list. Continue to prompt the user for names until the user enters quit. After the arrays are full (containing 30 names), do not allow the user to add new entries.

(25 Marks)

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